July 1, 2025

Mr. Gerald J. Shields Jr.
[redacted] Maryland [redacted]

RE: Perennial wheat using restriction enzymes and CRISPR-Cas9 gene editing originally sent August 7, 2017

Dear Colleagues:

Since we can digitally record the DNA of plants in a few days and a few thousand U.S. Dollars, I propose using restriction enzymes and CRISPR-Cas9 gene editing to create a version of perennial wheat.

Benefits: If a version of agriculturally useful perennial wheat could be developed then the benefits to the human race would be enormous.

1. Reducing tilling or plowing of the soil to preserve topsoil.
2. Reducing the cost of human food and animal feed.
3. This could be uses as part of the thesis or creative component in students' M.S. or Ph.D. programs.

Drawbacks: There is resistance, social, economic, and philosophical barriers to doing this.

1. Reducing resilience by decreasing to a single species or single strand of DNA our major food source is dependent on.
2. Currently, there are social and philosophical dislike to anything dealing with genetically modified organisms (GMO).
3. Economic dislocations would be caused because the reduction in employment of workers to plant the new perennial wheat.

Concept: This is a very oversimplification, but brevity is the start of great ideas.

1. Identify a perennial grass that is genetically similar to a version of agriculturally useful wheat.
2. Identify a version of agriculturally useful wheat that is genetically similar to the grass in #1.
3. Use gene editing to cut and paste either:
   a. The edible portion of the wheat into the grass, or
   b. The perennial portion of the grass into the useful version of wheat.

Current Resources: The limit is what is available in the Greater Washington, D.C. Metropolitan Area.

1. HacDC laboratory in Washington, D.C.
2. University of Maryland School of Agriculture
3. Beltsville Agriculture Research Library

For more information, please contact me at the address provided when this document was transmitted or by email at g[redacted]@[redacted].com.

My best regards,

Mr. Gerald J. Shields Jr.